

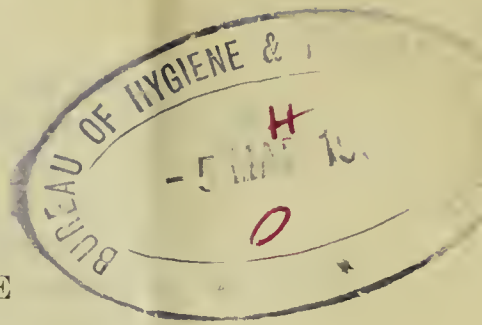
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MED. 1816—(S.M.P.—12,483—320)

NYASALAND



PROTECTORATE



REPORT OF THE MEDICAL DEPARTMENT FOR THE YEAR 1949

SECTION I. ADMINISTRATION

A. STAFF

1. Dr. P. S. Bell, Director of Medical Services, proceeded on leave pending retirement during May.

2. Dr. W. H. Watson, Deputy Director of Medical Services, was appointed Acting Director of Medical Services and Dr. P. J. Bourke, Senior Medical Officer, acted as Deputy Director of Medical Services, for the period May 5th till June 6th.

3. Dr. D. J. M. Mackenzie, O.B.E., arrived in June, on transfer from the Bechuanaland Protectorate as Director of Medical Services.

4. Dr. D. A. Baird, Medical Officer, was transferred to British Somaliland on promotion to the rank of Senior Medical Officer.

5. Dr. W. H. Watson, Deputy Director of Medical Services, and two of the Senior Medical Officers, Dr. F. O. W. A. Mahon-Daly and Dr. P. J. Bourke, proceeded on leave pending retirement during the year.

6. Dr. W. A. Glynn, Medical Officer, was promoted to the rank of Senior Medical Officer with effect from 1st November, 1949.

7. One Medical Officer proceeded on leave pending retirement and three Medical Officers, one of whom held a temporary appointment, resigned during the year. Four Medical Officers arrived on first appointment.

8. Miss E. G. S. Horne, Matron, was invalided from the service and went on leave during July. Miss A. Maslin, Senior Nursing Sister, was promoted to the rank of Matron with effect from 10th November, 1949.

9. Miss P. Hutchinson, Nursing Sister, was transferred to British Somaliland on promotion to the rank of Matron.

10. Three Nursing Sisters resigned and four arrived on first appointment during the year.

11. Mr. F. H. Hathaway who had been seconded from the British Empire Leprosy Relief Association to establish a Leprosy Settlement at Salima in the Central Province, resigned early in the year to take up a similar post in Nigeria.

B. Ordinances, etc. enacted during 1949 affecting Public Health

12.—(1) Ordinances.

(a) Dogs (Amendment) Ordinance, 1949. This enactment amends the principal Ordinance of 1947 so that certain provisions may be applied to specified parts of the Protectorate by notice in the *Gazette*.

(b) Control of Dogs Ordinance, 1949. This repeals the Dogs Ordinance, 1947, and makes better provision for the control of dogs and the prevention of rabies and trypanosomiasis.

(2) Government Notices Nos. 38 and 39 add Iodoform to the Second Schedule, Group II, of the Poisons Rules and the Poisons List.

(3) Government Notice No. 48 amends those of the Midwives Rules, 1947, dealing with registration and the form of certificate to be granted after examinations.

(4) Government Notice No. 50 appoints the Members of the Advisory Board of Health under section 10 of the Public Health Ordinance.

(5) Government Notice No. 234 revises the Midwives Rules, 1947, governing the qualifications of Nursing Sisters in charge of training centres and examination procedure.

(6) Government Notice No. 230 applies certain provisions of the Public Health Ordinance, 1948, to the Cape Maclear and Monkey Bay Hotel areas to enable sanitary control to be enforced at the base on Lake Nyasa used for the Solent flying boat service.

(7) Proclamations :

(a) Government Notice No. 196 proclaims Zomba as being an area infected with trypanosomiasis.

(b) Government Notices Nos. 215 and 227 apply the suppression of Rabies Rules to part of the Dedza District and to the whole of the Southern Province respectively.

(8) Orders :

(a) Government Notice No. 154 makes an order declaring the adjacent Blantyre and Limbe Townships to be a Town Planning Area.

C. Distinguished Visitors

13. The Secretary of State for the Colonies and Mrs. Creech Jones visited the African Hospital in Zomba. They made a tour of inspection and talked to members of the European and African staff.

14. Dr. E. D. Pridie, C.M.G., D.S.O., O.B.E., Chief Medical Officer to the Colonial Office, spent two weeks in the territory in December. During his stay Dr. Pridie visited a number of rural dispensaries, Mission hospitals and clinics, and Government District and Central hospitals. He travelled by road and took the opportunity of obtaining a practical knowledge of the health problems of the territory.

15. Dr. R. L. Lewthwaite, O.B.E., D.M., B.CH., M.R.C.S., F.R.C.P., Director of the Colonial Medical Research Service, paid a brief visit during November to obtain an appreciation of the research needs of the territory. He gave a talk to the Medical Staff in Zomba on the development and use of chloromycetin particularly in relation to the treatment of typhoid fever.

16. Dr. E. R. Cullinan, M.D., F.R.C.P., who was visiting East and Central Africa under the aegis of the Nuffield Foundation, spent ten days in Nyasaland. The purpose of the visit was to obtain data of the conditions under which Medical Officers worked so that medical school teaching staffs can be kept informed of the type of work done in the Colonies. He met and talked with all grades of staff and gave much valuable clinical advice. He addressed the Nyasaland Branch of the British Medical Association on Cirrhosis of the Liver.

17. Dr. Arne Barkhuus of the United Nations Organization also paid a brief visit, on behalf of the World Health Organization. His aim was to obtain first-hand information as to how the services provided by the Organization could be best utilized in African territories.

D. Financial

18. The estimated expenditure of the Department in 1949, apart from that chargeable to the Colonial Development and Welfare Fund, was 6.07 per cent. of the estimated total expenditure of the Protectorate for the year.

19. Expenditure incurred under grants from the Colonial Development and Welfare Fund is estimated at £5,481-15s-0d for 1949. The greater portion of this sum, *i.e.*, £5,334-9s-1d, was expended on Scheme D. 505, Venereal Diseases Campaign, and the balance on Scheme D. 902 (C), the Leprosy Settlement at Salima, the construction of which was discontinued early in the year owing to the resignation of the lay worker seconded from the British Empire Leprosy Relief Association.

20. The total revenue of the Department, apart from that derived from the sale through Post Offices of anti-malarial drugs, was £6,314-13s-0d as against £4,633-2s-4d in 1948. This was collected under the following Heads :—

				1948			1949		
				£	s	d	£	s	d
Hospital fees	..	..	..	2,860	2	2	3,516	17	7
Sale of Stores	..	..	..	1,241	11	4	2,160	13	11
Pathological fees	..	..	..	19	18	6	17	17	0
Radiological fees	..	..	..	135	9	0	198	9	0
Dental fees	..	..	..	314	14	4	382	6	10
Ambulance fees	..	..	..	28	16	0	17	8	8
Yellow Fever Inoculation fees	..		..	32	11	0	21	0	0
TOTAL	..	..	..	£4,633	2	4	£6,314	13	0

21. Sales of quinine, mepacrine and paludrine at Post Offices were as follows :—

				1948			1949		
				£	s	d	£	s	d
Quinine	..	..	..	1,272	18	8	1,068	0	0
Mepacrine	..	..	..	409	13	6	392	2	4
Paludrine	..	..	..	530	0	0	600	6	8
TOTAL	..	..	..	£2,212	12	2	£2,060	9	0

SECTION II. PUBLIC HEALTH

A. General Remarks

22. Annual Reports have been necessarily abbreviated since the outbreak of the World War. It is considered advisable, therefore, to give a brief résumé of the background against which the health problems of Nyasaland can be reviewed.

23. Nyasaland, with a land area of 37,000 square miles, is bounded on the north and east by Tanganyika Territory, on the east and south by Portuguese East Africa and on the west by Northern Rhodesia. On the east, Lake Nyasa lies in a trough which is part of the Great Rift Valley and from the south end of the Lake the River Shire runs to join the Zambesi 250 miles further south. The Lake lies 1,400 feet above sea level and the fall to the south is such that at Port Herald the altitude is only 120 feet above sea level.

24. On either side of the Lake the country rises steeply to form high plateaux. On the west the main habitable upland areas of the territory lie between 3,300 and 4,400 feet. To the south the Shire Highlands rise to a general elevation of 2,000 to 3,500 feet.

25. From the highlands numerous streams, many of them perennial, flow eastwards to the Lake and the Shire River.

26. On the Lake-shore the temperature seldom rises above 100° F. and the climate is humid throughout the year owing to the proximity of the Lake and the heavy rainfall during the wet season. This also applies to the Shire Valley where temperatures up to 115° F. are recorded. The climate varies with the altitude in other areas and in the highlands it is equable and healthy.

27. The rainfall is seasonal, commencing about mid-October with thunderstorms and heavy showers of rain until the end of December. Steady rains commence early in January and continue until about the end of March with short dry spells intervening. During June and July heavy mists are experienced in the highlands.

28. The overall population density, as calculated on the estimated population for 1948, is 60.8 persons per square mile. The habitable areas on the Lake-shore, Shire River and the upland plateaux are thus fairly evenly and densely populated.

29. The staple crops grown in the territory are maize, cassava, the millets and sorghum. Rice is being cultivated in increasing quantities in the Lake-shore area, on the shores of Lake Palombe and on the Shire River. Sweet potatoes, beans, groundnuts and tomatoes yield dietary supplements, and bananas, mangoes, guavas, pineapples and avocado pears grow readily. Citrus fruits have been established in certain districts and are appearing in the markets in fair quantities.

30. The prevalence of tsetse fly in many areas limits stock production and meat and dairy products are, generally speaking, difficult to obtain and insufficient. Goats account for the greatest number of small stock with pigs and sheep next in order of frequency. Most African villages have their quota of poultry. Stock and poultry, however, are slaughtered only rarely and the main source of good class protein is fish. Large quantities of dried fish are distributed from the Lake to the upland areas. Game is scarce and does not now make any major contribution to the food supply.

31. Food distribution has been improved during recent years by the establishment of an increasing number of native markets and much takes place through barter exchange. The small peasant farmer grows enough of a staple crop during a favourable season to meet his family needs, with, possibly, a surplus which can be exchanged at the local market for dried fish and other supplements. Normally, bananas are plentiful and such other fruits as grow readily are available in season. However, tradition is such that well-balanced crop production and rotation is rarely met with. In addition there is a general improvidence as to food storage against the hunger period between the seasons. "By September and October there is nothing other than maize and a few wild fruits to eat between meals." (Nyasaland Native Food. Miss J. Barker of the Nutrition Survey Unit, 1943.)

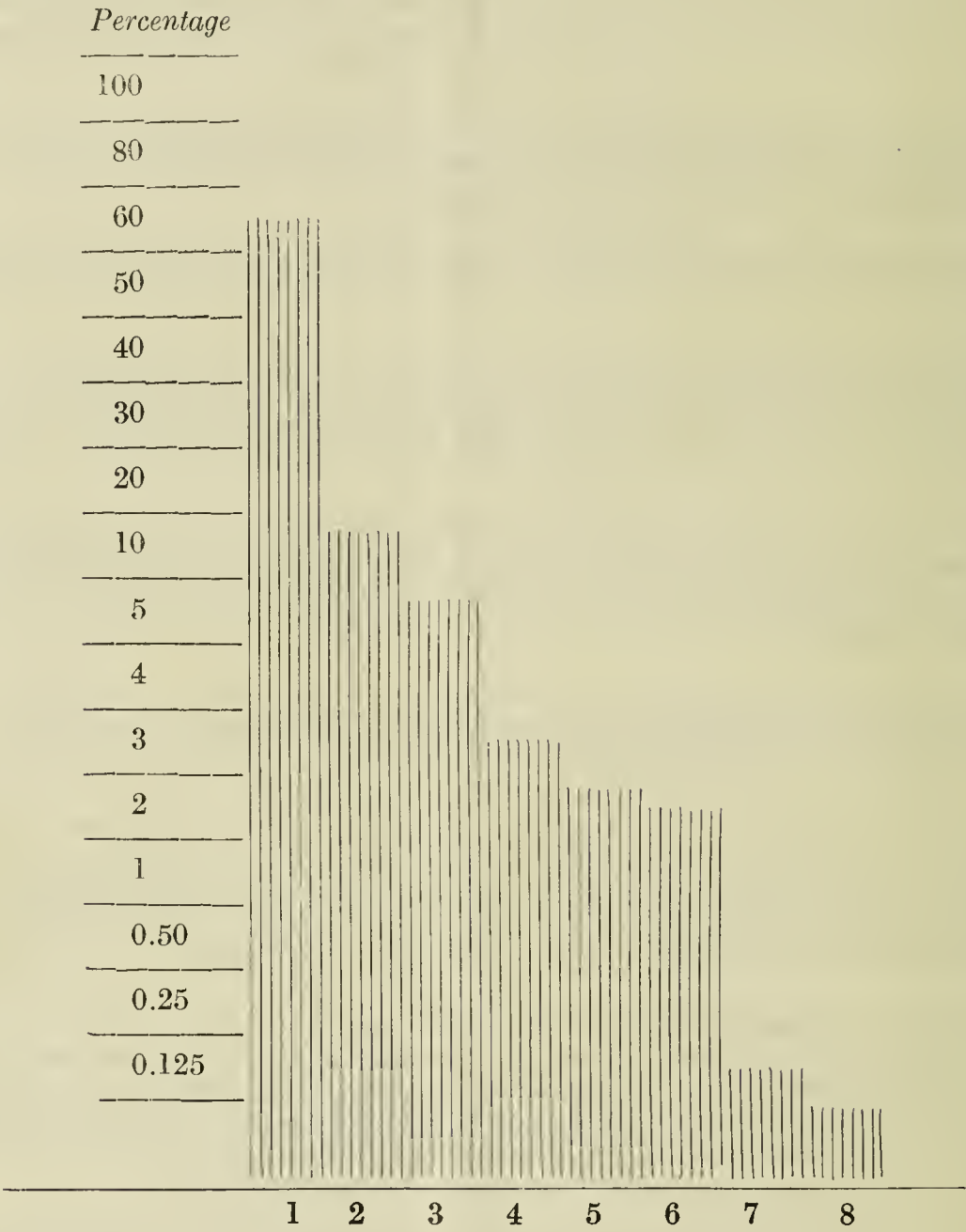
32. As a result the average African diet is ill-balanced, often inadequate for several months of the year, and there is much subnutrition. The hunger period precedes the onset of the rains and the planting season that follows has to be undertaken by an ill-nourished community with a lowered resistance at a time when there is a seasonal increase in the endemic parasitic diseases.

33. The general picture is that of a well-watered African territory with a generous seasonal rainfall and a soil structure capable of supporting the constituents of a reasonably well-balanced diet for the African community. On the other hand, the population pressure and poor agricultural practices are such that the stage is approaching rapidly when the food potential of the territory will be outstripped. This is further aggravated by the fact that the economy of the Protectorate is primarily an agricultural one and the main cash crops of tobacco and cotton grown by the Africans are limiting the amount of land essential for adequate food production by traditional methods.

34. Imposed on a poor nutritional state the common causes of morbidity exercise a profound influence on the levels of production, vigour and initiative. Tropical ulcer, malaria, hookworm, venereal disease and bilharzia account for 37.91 per cent. of the total diseases reported, but this percentage cannot be related to the actual morbidity in the community due to these causes.

TABLE I : RELATION OF THE MAIN COMMUNICABLE AND PARASITIC DISEASES TO OTHER DISEASES

- 1. Other diseases.
- 2. Diseases of the skin and cellular tissues.
- 3. Malaria.
- 4. Hookworm.
- 5. Venereal diseases—all forms.
- 6. Billharzia.
- 7. Relapsing fever.
- 8. Tuberculosis—all forms.



35. Such statistics as are available show that the majority of the diseases that occur in the Protectorate can be prevented. To achieve any appreciable progress in this direction, however, only a long-term policy of education and example will be successful in raising the standards of nutrition and environmental hygiene to a level where curative services will become economic. The education must start in the rural areas by practical instruction and the example will have to be given in the urban areas which alone have the facilities to produce quick results.

36. The past decade has shown little progress owing to war conditions and the consequent serious shortage of staff, equipment and supplies. Essential curative services have necessarily absorbed the full energies of the medical staff available and the preventive aspect has had to have what little attention that could be spared after the curative needs had been met.

37. On the agricultural side, however, some progress has been made towards better agricultural husbandry and better distribution of foodstuffs. In addition more varied crops are now being grown and there is an increasing awareness of the value of a better balanced diet.

TABLE A

Total area of Nyasaland	..	..	..	47,949 sq. miles
Total land area of Nyasaland	..	..	..	37,000 sq. miles
Total population—European (estimated)	..	..	..	4,000
African (1948)	..	..	..	2,270,000
Asian (estimated)	..	..	..	4,800
Other non-Africans (1945)	..	..	..	455

38. *Medical services available* : Hospitals for Africans are maintained by Government at all district administrative centres and total 19 in all. In the main urban centres of Zomba, Blantyre and Lilongwe there are European cottage hospitals ; wards for Asian patients are provided in conjunction with the

African hospitals at these centres. At Livingstonia and Likoma Island the Church of Scotland Mission and the Universities Mission to Central Africa respectively maintain services which are subsidized by Government grants-in-aid. General hospital facilities, under supervision by a qualified medical practitioner are maintained at five other Mission stations, while a number of others provide general wards which are supervised by a nursing sister.

39. Maternity and child welfare services are provided in the main by Missions and when a unit is under the supervision of a doctor and a trained nurse, a grant-in-aid is paid by Government. The larger Government hospitals have maternity wards attached and clinics are held there regularly. Five of the Mission maternity and child welfare centres run training courses for African midwives.

40. Dispensary services are provided by Government, Missions and by a number of industrial concerns, notably the tobacco and tea industries. The following Tables set out the ratio of the various units to the population.

TABLE B				
<i>Number of registered medical practitioners practising during the year</i>				
Government Medical Officers	..	..	..	12
Medical Missionaries	..	..	..	8
Private Practitioners	..	..	..	5
Practitioners employed by Companies	..	..	..	3
Government Administrative and Specialist Officers			..	5
			TOTAL	33
<i>Number of licensed medical practitioners practising during the year</i>				
Asian Government Sub-Assistant Surgeons	..	..	..	9
Private Practitioners	..	..	..	1
Employed by Railway		..	..	1
			TOTAL	11
			TOTAL PRACTITIONERS	44

NOTES :—(a) The total Government medical establishment including administrative and specialist officers—25

(b) There are four retired medical practitioners resident in the territory not included above.

Ratio of doctors in practice to total estimated population .. 1 : 51,255 persons.

TABLE C				
African midwives on Roll of Midwives	..	..	..	126
Ratio of midwives to African population	..	..	..	1 : 19,841 persons.

TABLE D				
(a) Number of African hospital beds :				
Government	..	..	..	1,115
Mission	..	..	..	955
TOTAL BEDS			..	2,070
Ratio of African hospital beds to African population	..	..	1	: 1,208 persons.
(b) Maternity beds for African patients :				
Government hospitals	..	..	..	40
Mission hospitals and clinics	..	..	..	250
TOTAL BEDS			..	290
Ratio of maternity beds to African population	..	..	1	: 8,621 persons.

TABLE E				
Number of rural dispensaries maintained by Government—96				
Ratio of Government rural dispensaries to African population	..	1	: 26,041 persons.	

41. *The work of the year :* The major item of public health importance was the food shortage resulting from the drought of 1948–49. In anticipation of the effects of food shortage, Government accumulated large stocks of maize and reserves of dietary supplements were obtained during the early part of the year so that a balanced diet could be made available to those cases of malnutrition that might be expected to occur. Of the supplements, dehydrated vegetables, food yeast, red palm oil and dried milk were distributed to the hospitals in the districts most affected by the drought. The dried milk was donated jointly by the British Red Cross Society and the Nyasaland Branch of the British Red Cross Society for the feeding of babies, young children and others who might be in need.

42. From June onwards a close watch was kept on the physical condition of the communities affected. Markets and other centres where there was a concentration of population, were visited regularly by Medical Officers and Sub-Assistant Surgeons and weighings of samples of the various age groups were carried out. This afforded an opportunity to inspect closely the physical condition of the people and to detect any signs suggestive of increasing or acute malnutrition.

43. By the end of the year the physical condition of the adolescent, young adult and middle-aged, sections of the community was, on the whole, good and there was no evidence of deterioration. On the other hand, infants, young children and old people were beginning to show signs of loss of condition.

It was noteworthy that this loss of condition was most evident in families where the head of the family was either absent from the territory or was away working in another area. Cases of malnutrition from these groups were being admitted to hospitals in relatively small numbers during the last month of the year. There was, however, no evidence of widespread famine conditions developing and it was obvious that the acute food shortage was localized to certain well-defined districts.

44. An epidemic disease control unit was formed in October and equipment assembled to deal with any major epidemic. The services of the unit had not been required up to the time of writing.

45. *Buildings* : Owing to shortage of labour and materials no major works could be undertaken during the year. Priority was given to European housing for the staff required to implement the Development Plan. The plans for the erection of the new Mental Hospital at Zomba were prepared and work will commence early in 1950. Plans for the extension of the Out-patients, Department of the Zomba African Hospital and for the building of a new Pathological Laboratory were also completed. Work continued on the building of Health Units at four centres and the main buildings were finished by the end of the year.

46. *Medical Stores* : The supply position continued to improve and the stores of essential medical supplies, such as bandages, dressings and the most commonly used drugs were more satisfactory. However, there is still much lee-way to be made up before the stores position can be considered to be satisfactory for essential needs.

47. *Advisory Board of Health* : The members of the Board, which is constituted under the Public Health Ordinance, 1948, were appointed by the Governor in Council during February, 1949. The Board consists of the Director of Medical Services, the Director of Public Works, two Unofficial Members and a Secretary. The functions of the Board are to advise the Governor on matters affecting the Public Health in relation to the administration of the Ordinance and the enactment of the Rules made under the Ordinance. Two meetings were held during the year.

B. Communicable Diseases

48. *Smallpox* : Despite the intensified vaccination campaigns of the last two years, smallpox continued to occur in epidemic form throughout the Central and Southern Provinces. In the Northern Province there was a small outbreak and 30 cases were reported with no deaths. In the Central Province 214 cases occurred with 49 deaths and the Southern Province 1,020 cases occurred with 190 deaths. The main centre of infection was in the Neno District of Blantyre where there was a sharp epidemic early in the year.

49. Table II sets out the vaccinations performed and the results reported :—

<i>Medical District</i>	<i>Primary</i>	<i>Accelerated</i>	<i>Immediate</i>	<i>Not seen again</i>	<i>Total</i>	<i>Cases</i>	<i>Deaths</i>
NORTHERN PROVINCE							
Karonga	9,035	1,397	6,516	16,448	33,396	—	—
Mzimba	1,548	1,090	618	24,947	28,203	30	—
Chinteché	4,096	785	449	269	5,599	—	—
CENTRAL PROVINCE							
Kasungu	4,965	73	1,775	2,678	9,491	—	—
Kota Kota	932	315	64	13,143	14,454	—	—
Fort Manning	12,308	7,232	8,739	15,311	43,590	22	13
Dowa	49,786	3,770	3,043	3,852	60,451	26	8
Lilongwe	40,156	15,774	17,431	85,885	159,246	130	26
Dedza	15,170	6,610	3,712	51,769	77,261	27	2
Ncheu	213	541	395	3,428	4,577	9	—
SOUTHERN PROVINCE							
Fort Johnston	—	—	—	43,402	43,402	151	28
Liwonde	7,654	687	1,857	32,443	42,641	21	6
Zomba	466	469	956	8,907	10,798	60	6
Chiradzulu	9,115	8,220	7,301	6,608	31,244	82	25
Blantyre	10,930	9	2,071	58,218	71,228	355	113
Cholo	6,914	4,291	542	11,950	23,697	88	1
Mlanje	11,823	1,411	310	260	13,804	69	3
Chikwawa	26,394	12,358	5,463	13,410	57,625	193	8
Port Herald	5,037	1,540	260	2,753	9,590	1	—
TOTAL	216,542	66,572	61,502	395,681	740,297	1,264	239

50. It is considered that the food shortage had an important influence on the epidemiology. There was much going and coming throughout the territory by persons visiting districts where there was a food surplus in order to obtain supplies for their families. Further, people from districts most affected by the drought went into areas of relative plenty in order to obtain work for which they received food. These persons could be expected to have a lowered resistance and it is significant that one small sharp epidemic in the Central Province occurred amongst persons in this category.

51. Vaccinators employed and paid by the Native Authorities, worked in teams of twelve under the supervision of an African Sanitary Assistant whose work was in turn supervised by a Health Inspector or a Medical Officer. However, shortage of supervisory staff meant that supervision was necessarily sketchy and infrequent. Further, the methods of carriage of lymph by Native Authority Vaccinators could not be adequately supervised and it is considered that many of the vaccinations performed may have been carried out with lymph which was not potent.

52. Production of calf lymph vaccine ceased during the early part of the year owing to the departure on leave, pending retirement, of the Pathologist. It was not possible to replace him by the end of 1949 and the production of lymph could not be resumed. Existing stocks, produced during 1948, proved adequate for the needs of the year. Stocks of lanolated lymph, imported during 1948, were used during the early part of the year and the staff who had experience of its use considered it to be satisfactory from the points of view of duration of potency and keeping properties.

53. *Malaria* : 32,771 cases of malaria were reported from hospitals and dispensaries during the year ; of these, 3,146 cases were treated at African Hospitals and 60 deaths were reported. 29,488 persons were treated as out-patients but the mortality is not recorded.

54. In the Lake-shore and Shire River areas malaria is hyperendemic and the main vector is *Anopheles funestus*. Transmission occurs throughout the year and the mortality and morbidity resulting is unknown. In the upland areas transmission is seasonal and the known vectors are *Anopheles gambiae* and *Anopheles costalis*. The work of Lamborn, carried out during the years 1923-1925, indicates that *A. costalis* is probably the most efficient vector of upland malaria. Although *Anopheles rhodesiensis* occurs in great numbers during the rains, it has never been proved to be a vector in the field. Dissections carried out by Lamborn, with a view to establishing the rôle of this mosquito in the transmission of malaria, were all negative for oocysts and sporozoites.

55. *Relapsing Fever* : Occurs in certain well-defined districts and the known vector is *Ornithodoros moubata*. The main centres of infection occur at Mzimba, Cholo, Mlanje, Dowa, Kasungu and Lilongwe and during the year 552 cases were reported with five deaths.

56. Experimental work carried out elsewhere has proved that gammexane is a potent weapon in the control of this disease. Owing to supply difficulties, mainly concerned with transport, it has not been possible to build up adequate stocks to start a campaign. Once this can be done, however, this relatively restricted problem can be dealt with district by district and it should be possible to bring it under control.

57. *Trypanosomiasis* : As in previous years, the number of cases notified has been minimal when related to the area of the territory infested with tsetse fly. Again, all cases diagnosed came from the Kota Kota District where there appears to be a small but active focus of the disease. The strain of parasite is *Trypanosoma rhodesiense* and the main vector is *Glossina mortisans*.

58. Trypanosomiasis in the Protectorate is mainly a veterinary problem but, before dismissing it as such, an investigation of the carrier state of the population in the fly-infested areas would be well worth while.

59. *Tuberculosis* : The real incidence of tuberculosis in the territory is unknown. The concensus of medical opinion is that the disease is on the increase and notifications during the past twenty years show a threefold increase in the number of cases recorded. At the same time, however, the total number of out-patient attendances recorded has more than trebled.

60. Bovine tuberculosis has been seen rarely in the past. During the year a veterinary investigation revealed 17 cases of the disease in two herds of cattle in the Northern Province. One further case was reported from the Zomba abbatoir and investigations suggested that the animal affected was imported from the Northern Province.

61. There is no real or factual information available as to the extent of the tuberculosis problem. During the years 1935 to 1937 a small investigation of groups of children in the Southern Province was carried out, using the Moro patch test. The following results were obtained :

1935				
<i>District</i>	<i>Number Examined</i>	<i>Age Group</i>	<i>Number Positive</i>	<i>Percentage Positive</i>
Fort Johnston ..	188	0— 5 yrs. ..	14	7.4
„ „ ..	281	5—10 yrs. ..	46	16.3

Of the total of 469 children examined three had active disease, two with glands in the neck and one with tuberculosis of the hip. Routine examination of all children showing a positive reaction without signs of active disease revealed only one positive source of infection.

1937				
<i>District</i>	<i>Number Examined</i>	<i>Age Group</i>	<i>Number Positive</i>	<i>Percentage Positive</i>
Zomba ..	124	Under 12 ..	14	11.3
Jeanes School ..	96	Not stated ..	2	2.1
Fort Johnston ..	124	Not stated ..	12	9.7

Of the children examined in Zomba four exhibited tuberculosis cervical glands.

62. The influence on the dissemination of tuberculosis by emigrant labourers repatriated with the disease from Southern Rhodesia and the Union of South Africa is not known.

63. The only data existing were collected during 1937 when, of 252 labourers repatriated on account of illness, 35 were stated to have pulmonary tuberculosis. Of this number only 12 were proved radiologically and bacteriologically to be suffering from active tuberculosis.

64. The above facts are very meagre and only illustrate the need for comprehensive investigation. It may be that Nyasaland is more favourably situated than other African territories in the region, but this cannot be accepted without great reserve. If investigation should prove this to be the case, however, then it is all the more important that the modern methods of control of the disease should be put into effect as early as possible.

65. *Rabies* : There were two African deaths from rabies early in the year, one each from the Blantyre and Cholo Districts. The disease assumed epidemic proportions in animals in the Southern and Central Provinces and Emergency Regulations were put into effect. Three hundred and sixty-four courses of prophylactic vaccine were given to persons who had been bitten by, or who had been in close contact with, rabid animals as compared with 102 and 201 courses given during 1947 and 1948 respectively.

66. *Leprosy* : Six leprosy settlements are maintained in the territory by Missions working under subsidy from Government. The returns of the number of cases treated are set out in Table III. The food shortage made it necessary to limit admissions to the settlements during the year and only lepromatous or the most necessitous cases could be taken in. The Government grants for the feeding of patients in the settlements were increased considerably to meet the very substantial rise in the cost of imported maize.

67. Treatment in the past has been confined to the use of ethyl esters. During the latter half of the year an order was placed for a relatively small quantity of sulphetrone which was distributed on arrival to settlements where it can be given under the supervision of a doctor. During 1950 larger quantities of the sulphones will be made available so that a more positive approach to the leprosy problem can be made.

68. A leprosy survey of the territory is being planned for 1950 after which it is hoped that the project to establish a modern central Government institution will be revived :

<i>Settlement.</i>	<i>In Settlement beginning of 1949</i>	<i>Admitted or re- admitted during 1949</i>	<i>Discharged or paroled during 1949</i>	<i>Absconded during 1949</i>	<i>Died during 1949</i>	<i>In Settlement end of 1949</i>	<i>Daily average in Settlement</i>	<i>New out-patients</i>
Bandawe (Church of Scotland) ..	38	3	10	—	3	28	28	—
Likwenu (Universities Mission to Central Africa) ..	63	25	35	6	3	44	58	51
Loudon (Church of Scotland) ..	17	26	3	12	—	28	26	—
Malamulo (Seventh Day Adventists)	167	156	79	—	7	237	192	48
Mua (White Fathers) ..	243	227	157	1	20	292	275	4
Mwami (Seventh Day Adventists)	52	25	27	2	—	48	49	4
Utale (Marist Fathers) ..	362	130	124	5	6	357	346	—
TOTAL ..	942	592	435	26	39	1,034	974	107

69. *Hookworm* : Hookworm accounted for a total of 13,498 attendances of which 1,897 were treated as in-patients and 11,601 as out-patients. Infestation is high on the Lake-shore and in the Shire Valley, gradually becoming less severe as the altitude increases in the upland areas.

70. During 1930 surveys were carried out in Karonga, Fort Johnston, at the Zomba Central Prison and the Lunatic Asylum. The rates of infestation as determined by microscopic examination of faeces were :

<i>District</i>	<i>Number of cases examined</i>	<i>Percentage infested</i>
Karonga	not stated	89.9
Fort Johnston :		
1. Kukulanga ..	133	70.0
2. Chinwala ..	34	67.0
Central Prison ..	302	30.75
Lunatic Asylum ..	65	40.00

71. A number of mass treatment campaigns combined with sanitation drives have been conducted in various districts over the past twenty years. Most villages now have a number of pit latrines, but the reinfestation rate must still be high, as these latrines tend to be regarded as objects to show rather than conveniences to use. Certain progressive Native Authorities insist on the construction of pit latrines at all family groups of huts, and fines are inflicted for negligence. Again, however, prejudice and lack of education are the main drawbacks to any real advance towards prevention.

72. *Bilharzia* : A total of 9,959 cases was reported during the year and of this total 995 were admitted to hospital. *S. Haematolium* is the predominant parasite and infestation rates of up to 80 per cent. have been reported. *S. Mansoni* occurs throughout the territory, and accounts for from 2 per cent. to 20 per cent. of the cases of schistosomiasis recorded. The highest percentage of *S. Mansoni* infestations occur in the Port Herald and Karonga Districts.

73. *Physopsis globosa* and *Physopsis africanus* are known intermediate hosts of *S. Haematobium* and *Planorbis* near *sudanicus* the intermediate host of *S. Mansoni*.

74. Generally speaking, Schistosomiasis is most prevalent in the low-lying and poorly-drained areas around the Lake-shore and in the Shire River Valley. The incidence falls as the altitude rises and in some areas above 4,000 feet it is uncommon to find bilharzia, although pockets of infestation do exist in poorly-drained areas at this height.

75. Standard treatment is by the proved antimony preparations given parenterally. This has little effect on the incidence, as reinfestation is almost a certainty. On the preventive side the magnitude of the problem militates against the general application of permanent control measures and only rising standards of environmental hygiene, health education and the establishment of protected water supplies will give any material hope of control.

76. During 1947 a small pilot eradication experiment was started in Kota Kota, funds being provided from the Native Development and Welfare Fund. The essentials of the scheme were education, mass treatment, drainage and attack against the snail. Education showed some result in that more persons came forward for treatment. Mass treatment failed owing to default of the majority of those attending before cure was effected. The drainage of three streams has produced good results and, despite considerable difficulties has proved to be the most satisfactory approach. Fish poisons used to kill the snail host proved ineffective ; the keeping of domestic ducks appeared to have an effect in reducing the snail population in certain pools, but was very uncertain in its application. Until the economic structure can support widespread protection of water supplies and methods of health education become more productive, the chemotherapeutic attack is the only effective one. It must be merely palliative until general measures can be undertaken. Its main benefits will be that a short treatment will reinforce mass treatment campaigns, it will reduce hospitalization costs and more general application of treatment will be possible in rural areas.

77. *Venereal Diseases* : During 1945 a Colonial Development and Welfare Fund grant of £42,000 over a period of five years was made for the purpose of increasing the facilities for the free treatment of venereal diseases. Owing to supply difficulties the expenditure on drugs amounted to approximately half of the total funds granted and the period of the scheme has therefore been extended for a further five years.

78. The following Table sets out the number of cases that have been treated for venereal diseases over the five-year period ending in 1949 :

			<i>Cases treated at Government Hospitals and Dispensaries</i>		<i>Cases treated at non-Government Hospitals and Dispensaries</i>		<i>Total</i>
1945	..	..	5,671	..	Not known	..	5,671
1946	..	..	10,011	..	639	..	10,650
1947	..	..	17,978	..	1,906	..	19,884
1948	..	..	16,899	..	1,278	..	18,177
1949	..	..	19,580	..	2,670	..	22,250

79. Drugs for the treatment of venereal diseases are issued free to those Medical Missions where treatment is given under the supervision of a qualified practitioner. Treatment is free to the patient.

80. There were 15,407 cases of syphilis, 6,671 cases of gonorrhoea and 172 cases of other venereal diseases reported during the year. The duration of treatment of each case has not been recorded, but in general it may be said that the patients default as soon as the clinical signs and symptoms of the infection disappear.

81. *Yaws* : Attendances at hospitals and dispensaries on account of yaws numbered 3,237. Of this number 770 were admitted to hospital. The yearly number of attendances for yaws when related to the yearly total attendances for all diseases over the past 20 years indicates that the incidence of infection has been reduced. However, these figures relate to a selected group of the population and there are no data available which will measure the trend in the community as a whole.

C. General Diseases

82. The recording of morbidity encountered at hospitals and dispensaries throughout the territory is unsatisfactory under the conditions applying. Diagnosis is made for the main part by African auxiliaries who are trained to recognize the commonest ailments prevailing. The accuracy of the records therefore is very doubtful and they show trends rather than facts.

83. *Deficiency Diseases* : With the background of the sub-nutrition prevailing in the territory, the number of cases of frank nutritional deficiencies recorded is very small. It is probable that many of the cases of this nature are suffering from one of the commoner endemic diseases and are diagnosed as such. How far the disease itself is due to the deficiency, or the deficiency due to lack of utilization of food as a result of the disease, cannot be assessed.

84. At the close of the year when cases of advanced malnutrition began to appear at the food distribution centres, it was evident that the acute hunger was an incident in the course of a chronic malnutrition which had been going on for a long period of time. Only a careful general health survey of random samples of the population will give a true measure of the incidence of nutritional deficiencies.

85. *Diseases of the Skin and Cellular Tissues* : In this category 178,070 out-patient attendances were recorded. This group of diseases accounts for the greatest number of admissions to African Hospitals and of attendances at rural dispensaries. Tropical ulcer, causing 37,655 attendances, is still the commonest disability encountered in the territory and the drain on the treatment resources of the Department is very heavy. Experience of the early treatment of abrasions and minor wounds amongst organized labour forces has shown that the incidence of tropical ulcer can be reduced to a very low level by simple means. To reduce the incidence in the general population is, therefore, a social problem of considerable economic importance.

86. European out-patient records show that diseases of the skin and cellular tissues constitute the second largest of the groups of diseases notified. Comparison of the figures recorded for the year 1945—1949 shows the following :

	1945	1946	1947	1948	1949
Total attendances	2,559	2,650	3,036	2,853	3,613
Diseases of the skin and cellular tissues	331 (3)	455 (1)	468 (2)	545 (1)	635 (2)
Per cent. of total	12.96	17.96	15.41	19.10	17.61

NOTE:—Figures in brackets () indicate the relation to total notification of other groups of diseases.

87. The incidence of “ ulcer ” is low, but it is of interest, if not of significance, that the more forward racial group should show this trend.

88. *Diseases of the Digestive System* : This group accounts for 47,944 out-patient attendances. The diseases most commonly reported were :—

- Dental Caries (17.29% of the total) ;
- Dyspepsia (19.93% of the total) ;
- Diarrhoea and Enteritis (13.07% of the total) ;
- Constipation (38.99% of the total).

The total number of cases does not include infectious and parasitic diseases affecting the gastro intestinal tract. As no reliable mortality statistics are available it is impossible to assess the importance of the effect of the diseases of the digestive system on the public health. It is probable that the majority of patients attending suffer from relatively minor ailments.

89. *Diseases of the Respiratory System.* A total of 45,458 attendances is recorded :—

- Coryza (15.60% of the total) ;
- Acute Bronchitis (60.84% of the total) ;
- Pneumonias (2.46% of the total) ;
- Others (18.09% of the total) ;

constitute the greatest part of this total. Berry, while working as a member of the Nutrition Unit, recorded his views on the aetiology of pneumonia and bronchitis in relation to the seasons. (Annual Medical and Sanitary Report, 1941.) He was of the opinion that the “ common operative predisposing factors of both are :

- (1) Seasonal semi-starvation ;
- (2) Lack of protection from the rain ;
- (3) Smoke in the house ;
- (4) Exhaustion.

often all operate at once.” He concluded that chest disease in Nyasaland is a sociological problem.

90. *Eye Diseases* : 27,295 cases attended for treatment of eye complaints. Of this number 27,001 were listed as being due to conjunctivitis but only 63 cases were diagnosed as being due to trachoma. Corneal ulcer accounts for a further 200 cases. When these data are related to an overall blind rate for the territory of 220 persons per 100,000 (1945 Census), the situation is far from satisfactory.

91. Facilities for the care and rehabilitation of the educable blind are minimal and the problem of how to increase these facilities in the Protectorate is under active consideration.

92. *Other forms of Violence* account for 46,236 attendances ; of these 22,357 are due to wounds and 6,431 to accidental injury by fall, crushing etc. No mortality or duration of disability figures are available.

D. Hospitals and Dispensaries

93. *European Hospitals* : The daily average number of European in-patients treated was 15.37 during 1949 as compared with 11.50 in 1948. A total of 740 patients was treated with 11 deaths. There were 3,613 out-patient attendances.

94. No major improvements to structure or equipment were effected during the year. The proposal to build a modern central grouped hospital in Blantyre has held up consideration of extensions to existing European hospitals. The present system of isolated European hospitals is uneconomic in that there is a considerable duplication of staff and equipment. To bring curative services up to a modern standard which will be compatible with the funds available, centralization of services plus an efficient ambulance organization are essential.

95. The total number of in-patients treated in Government Hospitals was 26,693 with 573 deaths as against 29,459 in-patients treated with 534 deaths during 1948; this shows a considerable drop in numbers. It was accounted for by the fact that the shortage of food during the year made it necessary to limit admissions to only the more urgent cases. At the same time the calorie value of the diet had to be lowered to a level of 2,300 calories. This is an overall average which included childrens' diets and, in practice, it proved not inadequate as an emergency measure. Dietary supplements of dehydrated vegetables, food yeast, red palm oil and dried milk were made available to District hospitals in the areas most affected by the food shortage so that cases of malnutrition could receive a fully balanced diet.

96. *Rural Dispensaries* : There were 608,520 attendances at rural dispensaries, an increase of 37,218 over 1948. The dispensary attendances recorded below are not reflected in the nosological returns at the end of this Report, due to the fact that the standard of diagnosis at rural dispensaries is not high enough to warrant inclusion of these data.

97. The supply position improved during the year and it was possible to make more realistic allocations of dressings and essential drugs during the latter half of the year. The situation is by no means satisfactory and difficulties must be expected for some time to come. It is hoped, however, that when a more adequate and stable staff of Medical Officers is achieved, more frequent supervision of dispensaries can be undertaken and the standard of curative work advanced to a more effective level. At the same time the positive aspect of the dispensary service will be developed.

98. Lack of material and maintenance during the war years has caused a serious deterioration in the structure of buildings which will take a number of years to put right.

99. Acknowledgement is made here of the work of the Medical Aides during the difficult years. These men have been posted to remote areas, after a brief training, and have been working steadily with inadequate supplies and infrequent supervision. There are many temptations but the casualties have been remarkably few which augurs well for the future of the work that must be carried out by Africans for their own community.

TABLE IV.—INCIDENCE OF DISEASES ACCORDING TO GROUPS

						<i>Hospitals</i>	<i>Dispensaries</i>
1.	Infectious and parasitic diseases	..	..	..	..	10,109	74,619
2.	Cancer and other tumours	..	..	..	..	302	135
3.	Rheumatism, diseases of nutrition and of endocrine glands and other general diseases	..	..	..	..	443	6,293
4.	Diseases of the blood and blood-forming organs	..	..	..	..	121	1,211
5.	Chronic poisoning	..	..	..	..	4	—
6.	Diseases of the nervous system and sense organs	..	..	..	..	1,362	78,134
7.	Diseases of the circulatory system	..	..	..	..	240	408
8.	Diseases of the respiratory system	..	..	..	..	1,446	91,801
9.	Diseases of the digestive system	..	..	..	..	1,138	110,210
10.	Non-venereal diseases of the genito-urinary system	..	..	..	..	766	1,380
11.	Diseases of pregnancy, childbirth and the puerperal state	..	..	..	..	1,682	320
12.	Diseases of the skin and cellular tissues and of bones and organs of locomotion	..	..	..	..	4,181	145,970
13.	Senility malformations and diseases of early infancy	..	..	..	..	46	—
14.	Senility	..	..	..	..	12	—
15.	Affections produced by external causes	..	..	..	..	2,982	75,013
16.	Ill-defined diseases	..	..	..	..	1,573	23,026
TOTAL						26,407	608,520

E. Special Services

100. *Surgical Specialist* : The Surgical Specialist is based at the Zomba African Hospital. A regular weekly visit is made to Blantyre, and district hospitals are attended as required. During the year a total of 1,221 operations were performed at the Zomba African Hospital of which 217 were major operations.

101. The teaching of clinical and systematic surgery to Hospital Assistants is under the supervision of the Surgical Specialist. In this he is assisted by a Medical Officer on the African Hospital staff, but in the main the surgical teaching is carried out by the Specialist.

102. *Dental Surgeon* : The Dental Clinic is at Zomba and the staff consists of one Dental Officer, one European Dental Mechanic and two African Dental Aides. During the year two visits were paid to Lilongwe in the Central Province and one to Mzimba in the Northern Province.

103. There were 1,479 European attendances and 2,230 African attendances throughout the year. The work has expanded considerably during 1949 and a small number of Africans have requested conservative treatment. The majority of Africans attending, however, do not seek treatment except when they are in severe pain and extraction is the only remedy.

104. The two African Dental Aides have now been attached to the Clinic for four years and three respectively. One acts as personal assistant to the Dental Officer in the surgery and the other undertakes the majority of the African work under the supervision of the Dental Officer.

105. Hospital Assistants are given instruction in the technique of local anaesthesia and extractions by the Dental Officer during the final year of training.

106. *Laboratory Services* : The Pathologist went on leave pending resignation at the end of March and the Laboratory has been in charge of the Medical Officer of the European Hospital for the remainder of the year. The routine work was performed by a Senior Hospital Assistant under supervision of the Medical Officer.

107. The Medical Officer conducted a systematic course of lectures in pathology to the Hospital Assistants and supplemented this course with three months' instruction in practical laboratory methods. Two Medical Aides were under training at the Laboratory during the year.

108. The following specimens were prepared and examined in the Laboratory :—

Faeces	..	..	..	..	4,362
Bacteriological cultures	..	..	..	..	210
Biochemical	..	..	..	..	89
Haematological	..	..	..	..	5,980
Serological	..	..	..	..	5,659
Smears, sputum etc.	..	..	..	..	617
Sections	..	..	..	..	66

109. *Production of Calf Lymph* : Owing to shortage of expert staff, calf lymph production had to be suspended for the latter nine months of the year. Large stocks had been prepared during 1948 and the supply in reserve proved adequate for the needs of the year. Attempts were made to recruit the services of a Laboratory Technician who could carry on this work but by the end of the year the post had not been filled.

110. *School Inspections* : The staff position has prevented any regular system of school inspection being instituted. Surveys of school children in district schools are made from time to time during the year, as found possible by Medical Officers. School inspections were carried out at the European Schools in Blantyre and Limbe respectively. The health of the children was good and only minor defects noted, the commonest of which were dental caries, enlarged tonsils and minor visual errors.

F. Maternity and Child Welfare

111. This important activity in the territory is undertaken mainly by Missions. Those Missions which employ a full-time medical practitioner and a nursing sister are eligible for a grant-in-aid from Government.

Table V sets out the work done throughout the year :—

<i>Centres</i>				<i>Antenatal clinic</i> (<i>new cases</i>)	<i>Infant Welfare clinic</i> (<i>new cases</i>)	<i>Confinements</i>	
Church of England	..	..	742	..	388	..	407
Church of Scotland	..	..	1,786	..	4,160	..	2,358
White Fathers	..	..	2,503	..	2,546	..	1,424
Seventh Day Adventists	..	..	472	..	—	..	386
Dutch Reformed Church	..	..	1,686	..	399	..	1,459
Government	..	..	1,856	..	1,289	..	1,708
TOTAL	1949	..	9,045	..	8,782	..	7,742
TOTAL	1948	..	7,620	..	6,759	..	6,745

112. The training of midwives is undertaken by Government and by Medical Missions. Training and district work is controlled by a central Midwives Board.

113. A number of new clinics were developed during the year by Missions, but, on the whole, the shortage of trained African Midwives has limited considerably the development of this service. This has been met in one area in the Northern Province by the Church of Scotland Mission which has employed illiterate women as welfare assistants. These women are given very elementary training in certain aspects of the work and are then posted to villages in the district ; they are given a limited supply of medicines and dressings and come in to the central clinic once a month bringing their supply boxes with them. The boxes are replenished and at the same time the women are given a short lecture in the vernacular on some particular aspect of their work.

114. Government does not maintain maternity and child welfare clinics outside District hospitals. Midwives are posted to the maternity wards of these hospitals and a clinic is held regularly at these wards. Therefore, the main development of the district work has been left in the hands of the Missions.

G. Training of African Personnel

115. *Hospital Assistants and Medical Aides* : The training of these men is carried out mainly by Government at the Zomba African Hospital. At the beginning of the year the Church of Scotland Mission at Livingstonia started a course of training for Medical Aides under subsidy from Government. The Universities Mission to Central Africa also runs its own course of training for Hospital Assistants and Dressers at all major stations in the diocese, the training being done mainly in Tanganyika Territory. Their medical establishments in Nyasaland are staffed by their own trained auxiliaries.

116. The Zomba African Hospital course for Medical Aides lasts for two years, during which instruction is given in general nursing and the diagnosis and treatment of the commoner ailments met with in practice. Examinations are held at the end of the first and second years. After the second year examination a number of Medical Aides are selected for further training as Hospital Assistants. The course lasts for one year, during which intensive instruction in the elements of medicine, surgery, materia medica and laboratory methods is given. An examination is held at the end of the course and those passing are posted as Hospital Assistants.

117. The minimum educational standard required for entry to the course is now Standard VI but Standard VIII entrants are accepted when they come forward. Out of a total of 21 new entrants at the end of 1949 five had the Standard VIII qualification.

118. Examinations were held during September for Medical Aides in training. Fifteen out of 16 candidates passed the first-year examination ; of ten candidates sitting the second-year examination all passed, five of whom were selected for the Hospital Assistants' course. Five third-year men sat the Hospital Assistants examination and all passed. This pass rate may seem high, but most of those who seem unlikely to stay the intensive course are rejected during the first year. Now that there is an increasing number of applicants for these courses a much more careful selection can be made and the casualty rate is accordingly very much reduced.

119. *Sanitary Assistants* : The course of training is conducted by the Chief Health Inspector at the Sanitary Assistants School attached to the Zomba African Hospital. During the war years and afterwards the shortage of staff necessarily restricted the training as only limited personal supervision could be given by the members of the Health Inspectorate. The course is being reorganized and it is the intention to give a full two year's course of practical and theoretical instruction. At the same time, conditions of service will be made equivalent to those of Medical Aides so that the positive and curative aspects of the rural health services will have equal status. The object is to produce an essentially practical Sanitary Assistant who can demonstrate the simple correction of faulty environmental hygiene with the means at hand to the average villager.

120. *Midwives* : As stated previously, the training of Midwives is largely in the hands of the Missions engaged in maternity and child welfare work. The statutory course of training which is under the direction of the Midwives Board lasts for two years. During the first year, elementary nursing is taught and, during the second year, midwifery. Training is conducted in the vernacular and a Sub-standard IV educational qualification is accepted for entry to the course. At the end of the first year an examination in elementary general nursing is held and those who pass then go on to the midwifery training. Those who fail are normally unsuited to further training and are given the opportunity to accept employment as Female Ward Attendants in the hospitals. At the end of the second year, trainees sit the statutory examination for the midwifery certificate conducted by a technical sub-committee appointed by the Board. Those who pass are registered as Midwives.

121. At the certificate examinations held during 1949, 26 candidates sat and 20 passed. Two were referred for six months and four failed.

122. Of the Zomba African Hospital trainees, eight second-year girls sat the examination of whom five passed, two failed and one was referred for six months. Ten first-year girls entered the course at the beginning of the year of whom four completed the first year, sat the nursing examination and all passed. Five resigned from the course and one was sent away as being unsuitable. Seventeen new trainees were accepted at the end of the year for the 1950 course.

SECTION III. VITAL STATISTICS

123. The following Tables show sick, invaliding and death rates for European and African officials during 1949, together with the corresponding figures for 1948 :

A. EUROPEAN OFFICIALS

			1948		1949
Total number of European officials resident	..	..	397	..	549
Average number resident	..	..	301.6	..	424.5
Total number on sick list	..	..	128	..	140
Total number of days on sick list	..	..	1,571	..	2,052
Average daily number on sick list	..	..	4.29	..	5.62
Percentage of sick to average number resident	..	..	1.42	..	1.32
Average number of days on sick list for each patient	..	..	12.27	..	14.66
Average sick time to each resident	..	..	3.96	..	3.74
Total number invalided	..	..	Nil	..	2
Percentage of invalidings to total resident	..	..	Nil	..	0.37
Total number of deaths	..	..	1	..	Ni
Percentage of deaths to total resident	..	..	0.25	..	Nil

B. AFRICAN OFFICIALS

Total number of African officials resident	..	..	5,422	..	6,138
Average number resident	..	..	5,001	..	5,644
Total number on sick list	..	..	637	..	529
Total number of days on sick list	..	..	5,941	..	5,329
Average daily number on sick list	..	..	16.2	..	14.6
Percentage of sick to average number resident	..	..	0.32	..	0.26
Average number of days on sick list for each patient	..	..	9.3	..	10.7
Average sick time to each resident	..	..	1.09	..	0.87
Total number invalided	..	..	4	..	3
Percentage of invalidings to total number resident	..	..	0.07	..	0.04
Total number of deaths	..	..	9	..	6
Percentage of deaths to total number resident	..	..	0.17	..	0.1
Deaths :					
Nephritis					2
Pneumonia					
Acute Heart failure					
Mitral stenosis					
Pulmonary T.B.					

SECTION IV. HYGIENE AND SANITATION

The very marked increase in the European population of the Protectorate, necessary to initiate and expand the Post-war Development Schemes, created first and foremost a housing problem. Resources of material and labour did not permit of an extended programme of permanent housing. To meet Government's needs, the Public Works Department carried out an energetic programme of semi-permanent housing of simple design and cheap construction. This did alleviate the problem to a certain extent but the programme of permanent housing which was undertaken has gone ahead very slowly in the face of grave supply difficulties. In the urban centres, the quantity of public work in hand, by Government, commercial interests and industrial concerns, necessarily attracted large numbers of African labourers ; this in turn created a serious problem of African housing. Numerous mud huts and reed structures were erected by the labourers themselves on any land they could secure. Water supplies had to be obtained from whatever sources were available and sanitation was virtually non-existent. This naturally threw a tremendous strain and responsibility upon the Local Authorities who had neither the resources nor the funds to tackle the problem in any comprehensive fashion.

125. The activities of the Health Staff were directed mainly towards the abatement of existing conditions. Much preliminary work has been done but the lee-way that has to be overtaken is so tremendous that it cannot but be a number of years before the safety margin is achieved. The question of urban hygiene and sanitation is undoubtedly one of the more urgent and serious problems that faces the administration.

126. Water supplies to the urban areas of Zomba, Blantyre and Lilongwe are derived from dams on local streams. A purification plant exists for the Blantyre water supply and settling tanks for Zomba and Lilongwe. Supplies are on the whole adequate during the dry season but water rationing has to be resorted to at times. In all areas water for domestic use is boiled and filtered by individual householders. In Limbe, borehole supplies tap an underground source but, owing to shatter in the rock formation purity cannot be guaranteed. Plans are under way to improve Blantyre, Lilongwe and Zomba water supplies and to instal adequate purification plants.

127. In the rest of the territory water is obtained normally from shallow wells or pools in the rivers ; pollution is therefore heavy and no precautions are taken by the indigenous inhabitants to purify their drinking water. A number of Government wells with protected tops have been installed in many Native Authority areas and these wells are a distinct advance on previous standards.

128. Due to the inadequacy of piped water supplies there are no comprehensive sewage systems in the territory. During recent years it has been the practice to instal septic tanks at European houses where there is a piped water supply. This is satisfactory in the districts or in the older portions of the townships where large plots minimize the risk of heavy soil pollution. However, in the larger urban areas where land is scarce and plots are accordingly diminishing in size, this system is obviously dangerous.

129. In the townships where septic tanks have not been installed, a conservancy system is in operation ; a dry bucket latrine is normally used in European quarters and pit latrines are commonly used for African quarters and in certain African villages.

130. Successive campaigns against hookworm in Native Authority areas have resulted in a number of pit latrines being constructed. However, the standard varies in direct relation to the keenness and stage of development of the Native Authority. In many places these pit latrines rank as show-places to be demonstrated to the occasional visitor rather than as an essential convenience. There are signs, however, amongst the more advanced African Chiefs that an increasing interest is being taken in this extremely important health problem.

131. *Vector control* : Vector control in the accepted modern sense does not exist to any extent. In the urban areas and at certain district administration headquarters it has been confined to attack against mosquito larvae and larvicidal oils are in general use. Towards the end of the year a start was made on an experimental basis, to treat African houses in Zomba with residual insecticides.

132. From recent work carried out in Africa on residual insecticides it seems obvious that gammexane is the preparation of choice for the purpose of general vector control and is more economic than attack against a specific vector. With the use of gammexane it is hoped that the mosquito, the house fly and *O. moubata* can be controlled readily in houses. Plans are being prepared to develop an insecticide service which, in the first instance, will be put into operation at district administration headquarters, particularly on the Lake-shore and Lower River.

133. *Port and Health Administration* : The Nyasaland Railways operate their own medical service. At the present time two Asian Sub-Assistant Surgeons are employed and a number of Sanitary Capitaos. However, the Railways propose to appoint a European doctor during 1950, who will be responsible for the general health policy of the Railways.

134. The three main aerodromes exist at Chileka (near Blantyre), at Lilongwe and at Cape Maclear which is the British Overseas Airways Corporation flying boat base. The only service operating directly from a yellow fever endemic area is that provided by the Solent flying boat service from Port Bell to Cape Maclear. This service commenced in September of 1949 and sanitary control was instituted to deal with the south-bound flying boat. Measures for the control of mosquito larvae were put into operation at the flying boat base and in the immediate surroundings. Aircraft are sprayed with insecticide on arrival and, after a night stop, before departure.

135. At Blantyre and Lilongwe, African Sanitary Assistants are posted to the aerodromes and maintain a measure of control of mosquito breeding. However, as all aircraft arriving at these aerodromes have normally been treated before arrival, outgoing aircraft are not subject to sanitary restrictions.

136. At the ports of entry on the main roads vaccination is carried out on all Africans entering on foot. The vehicular traffic is also subject to certain restrictions in connection with the control of smallpox.

137. *Work of the Health Staff* : The Health Inspectorate has been below establishment throughout the year. The work of the Health Inspectors has been mainly concerned with urban sanitary control and the training of African Sanitary Assistants. The full course of training for Sanitary Assistants, in force in earlier years had to be modified owing to the shortage of staff and the urgent need for auxiliary African personnel. This has naturally led to a certain deterioration in standards adopted previously. In 1950 a full two year's course will be instituted and more intensive theoretical and practical training given.

138. During the early part of the year the Health Inspectorate was mainly occupied with smallpox control ; when this situation eased it was necessary to devote a greater part of their time to work in the urban areas. As a preliminary to formulating a sound regime in hygiene and sanitation in the main urban area of Blantyre/Limbe, two Health Inspectors were posted to this area to carry out a sanitary survey. Action is being taken on the information received and during 1950 priority will be given to the problem of Government African housing.

139. *Hotels* : A survey of sanitary conditions at the hotels in the territory was carried out towards the end of the year. It was found that much required to be done and reports on the state of hotels were submitted to the Hotels Board. Where necessary, structural alterations and the installation of a modern system of sanitation are being required.

140. Attention was also directed to the improvement of sanitary conditions at the new housing estates developed by Government during the year to meet the housing shortage.

SECTION V. PRISONS AND ASYLUMS

141. *Prisons* : There was a good deal of overcrowding in prisons during the year, in a certain measure due to the conviction of persons under the Emergency Regulations made as a result of the food shortage.

142. In addition, it was necessary to reduce the standard of diet owing to the food situation, and a careful watch was kept on the physical condition of prisoners. There was no evidence of physical deterioration or of any ill-effects due to this reduction.

143. The health of the prisoners was good and there were no epidemics. A minor outbreak of relapsing fever in one district prison was quickly controlled by the use of gammexane and no further cases occurred.

144. The daily average number on the sick list at all prisons was 23.8 which is 2.41 per cent. of the total daily average number of prisoners. There were 238 prisoners admitted to hospital throughout the Protectorate.

145. Fifteen deaths occurred, eleven from natural causes, two by execution and two prisoners killed during the riot at the Central Prison.

146. All prisons were inspected regularly by members of the medical staff of the Department.

147. *Central Prison* : There is a prison hospital maintained at the Central Prison, in charge of a Hospital Assistant, whose work is supervised by a Medical Officer. There are ten beds in the hospital and during the year the daily average in-patients numbered 11.20. The total out-patient attendances numbered 7,350 and of this number 214 were admitted to hospital. The two main complaints treated were bronchitis and malaria. There were ten deaths from natural causes during the year.

148. *Central Lunatic Asylum* : During the year 56 male and nine female patients were admitted, the daily average in-patients for the year amounting to 144.05. For the five-year period ending 1949, the daily average in the Asylum has been :

1945	1946	1947	1948	1949
126.66	143.26	155.51	150.90	144.05

149. There were 22 male and four female patients admitted for the first time ; nine male and four female patients were discharged as cured or to the care of relations.

150. A total of 3,340 out-patients attended of whom 2,795 were males and 545 females.

151. The Institution functions as an Asylum rather than as a mental hospital. Under existing conditions little treatment in the accepted sense can be given. Towards the end of the year a Medical Officer conducted a review of every patient and the Report disclosed that, apart from a comparatively small number, the majority of the patients are either incurable or will require a long period of treatment.

152. The plans for the new Mental Hospital were completed during the year and work commenced on the foundations during December. A Medical Officer with psychiatric experience is being recruited during 1950 and will act as Medical Superintendent of the Hospital. The Institution which is at present under the Prisons Administration will be administered by the Medical Department as from 1st January, 1951.

153. A Visiting Committee attended the Asylum on the first Saturday in every month. This Committee reviews all cases admitted to, and discharged from, the Asylum. In addition, frequent visits are paid by individual members of the Committee.

Acknowledgement : An increased volume of work has been achieved with little increase in the facilities to hand and it is fitting to place on record an appreciation of the enthusiasm and loyalty of all grades of the staff of the Department during the year.

D. J. M. MACKENZIE
Director of Medical Services

Table VIa. Return of Diseases and Deaths (European in-patients) for the year 1949

Diseases				Remain- ing at the end of 1948	Admissions during 1949	Total cases treated	Deaths	Remain- ing at the end of 1949
1-44. <i>Infectious and parasitic diseases.</i>								
1.	(a)	Typhoid fever	...	1	1	2	—	—
	(b)	Paratyphoid	...	—	1	1	—	—
4.		Relapsing fever	...	—	1	1	—	—
7.		Measles	...	—	1	1	—	—
9.		Whooping cough	...	—	1	1	—	—
10.		Diphtheria	...	—	1	1	—	—
11.		Influenza	...	—	6	6	—	—
13.		Dysentery	...	—				
	(a)	Amoebic	...	—	19	19	—	1
	(b)	Bacillary	...	1	2	3	—	—
	(c)	Unclassified	...	—	1	1	—	—
23.		Tuberculosis of the Respiratory System	...	—	1	1	—	—
34-35. Venereal Diseases :—								
	(a)	Syphilis	...	—	1	1	—	—
	(b)	Gonorrhoea	...	—	1	1	—	—
	(c)	Other Venereal diseases	...	—	1	1	—	—
38.		Malaria :—	...					
	(a)	Benign Tertian	...	—	22	22	—	1
	(b)	Subtertian	...	1	26	27	1	—
	(c)	Unclassified	...	—	88	88	1	1
41-42.		Other helminthic diseases	...	—	1	1	—	1
15, 19, 20,		Other infectious and/or parasitic	...					
36, 43, 44.		diseases	...	—	6	6	—	—
45-55. <i>Cancer and other tumours.</i>								
45-53.	(a)	Malignant	...	—	1	1	1	—
54.	(b)	Non-malignant	...	—	1	1	—	—
	(c)	Undetermined	...	—	1	1	—	—
56-69. <i>Rheumatism, Diseases of Nutrition and Endocrine glands and other general diseases.</i>								
56-57.		Rheumatic conditions	...	—	5	5	—	—
65-69.	(b)	Endocrine glands and general diseases	...	—	2	2	—	—
70-74.		Diseases of the blood and blood-forming organs	...	—	2	2	—	—
82.		Cerebral haemorrhage	...	—	1	1	1	—
78-89. <i>Diseases of the Nervous System and Sense Organs.</i>								
78-81.		Other diseases of the nervous system	...	—	11	11	—	—
83-87.		system	...	—	3	3	—	—
88.		Other diseases of the eye, and annexa	...	—	5	5	—	—
89.		Diseases of the ear and mastoid sinus	...	—				
90-103. <i>Diseases of the Circulatory System.</i>								
90-95.	(a)	Heart Diseases	...	—	11	11	—	—
96-103.	(b)	Other circulatory diseases	...	—	24	24	3	—
104-114. <i>Diseases of the Respiratory System.</i>								
106.		Bronchitis	...	—	21	21	1	—
107.		Broncho-pneumonia	...	—	4	4	—	—
108.		Lobar pneumonia	...	—	7	7	—	—
104-105.		Other diseases of the Respiratory System	...	—	13	13	—	—
110-114.		System	...					
Carried forward				3	293	296	8	4

Table VIa. Return of Diseases and Deaths (European in-patients) for the year 1949

Diseases				Remain- ing at the end of 1948	Admissions during 1949	Total cases treated	Deaths	Remain- ing at the end of 1949
<i>Brought forward</i>				3	293	296	8	4
115-129. <i>Diseases of the Digestive System.</i>								
119-120. Diarrhoea and enteritis :—								
(a) Under 2 years of age				—	15	15	2	—
(b) Over 2 years of age				—	20	20	—	1
121. Appendicitis				—	7	7	—	1
122. Hernia, intestinal obstruction ...				—	9	9	—	—
124. Cirrhosis of the liver				—	1	1	—	—
125-127. Other diseases of the liver and biliary passage				—	2	2	—	—
115-118. Other diseases of the Digestive								
123-128, System				2	77	79	—	1
129.								
130-139. <i>Non-Venereal diseases of the Genito- Urinary System.</i>								
130-132. Nephritis (all forms)—								
(a) Acute				—	1	1	—	—
133-139. Other non-venereal diseases of the Genito-Urinary system ...				—	37	37	—	1
140-150. <i>Diseases of Pregnancy, Child-birth and the puerperal state.</i>								
140-142. Abortion				—	10	10	—	—
145-147. Other toxæmias of pregnancy ...				—	1	1	—	—
143, 144, Other conditions of the puerperal								
148-150. state				—	97	97	—	7
151-156. Diseases of the Skin, Cellular Tissues, Bones and Organs of Locomotion				—	52	52	—	—
157-161. Congenital Malformations and diseases of early infancy :—								
157. (a) Congenital malformations ...				—	1	1	—	—
161. (b) Other diseases peculiar to early infancy				—	1	1	—	1
162. Senility				—	1	1	1	—
163-198. <i>External Causes.</i>								
172-198. Other forms of violence ...				2	56	58	—	1
199-200. <i>Ill-defined diseases</i>				—	52	52	—	2
TOTALS ...				7	733	740	11	19

Table VIb. Return of Diseases and Deaths (Native In-patients) for the year 1949 (including Asiatics, Native Officials, K.A.R. Native Ranks, Native General Population, Asiatic and Native Convicts)

Diseases				Remaining at the end of 1948	Admissions during 1949	Total cases treated	Deaths	Remaining at the end of 1949
1-44. <i>Infectious and Parasitic Diseases.</i>								
1-2. Enteric Group :—								
	(a)	Typhoid Fever	...	1	27	28	4	6
	(b)	Paratyphoid	...	—	1	1	—	—
	(c)	Type undefined	...	—	1	1	—	—
4.		Relapsing Fever	...	4	233	237	5	11
5.		Undulant fever	...	—	3	3	—	—
6.		Smallpox	...	4	11	15	—	—
7.		Measles	...	—	53	53	1	1
9.		Whooping Cough	...	4	78	82	3	5
10.		Diphtheria	...	1	9	10	4	—
11.		Influenza	...	—	10	10	—	—
13. Dysentery :—								
	(a)	Amoebic	...	7	156	163	3	6
	(b)	Bacillary	...	—	39	39	2	—
	(c)	Unclassified	...	—	24	24	1	—
16.		Acute Poliomyelitis	...	1	3	4	—	—
18.		Cerebro-spinal Fever	...	—	26	26	17	—
22.		Tetanus	...	1	9	10	5	—
23-32. <i>Tuberculosis all forms.</i>								
23.		Tuberculosis of the Respiratory system	...	12	245	257	28	15
24-32.		Other Tuberculous diseases	...	8	102	110	5	10
32.		Leprosy	...	12	56	68	1	5
34-35. Venereal diseases :—								
	(a)	Syphilis	...	129	1,651	1,780	15	83
	(b)	Gonorrhoea	...	21	645	666	1	7
	(c)	Other venereal diseases	...	1	120	121	1	18
38. Malaria :—								
	(a)	Benign Tertian	...	3	150	153	6	1
	(b)	Sub-tertian	...	47	1,555	1,602	34	46
	(c)	Quartan	...	—	4	4	—	—
	(d)	Cachexia	...	1	35	36	2	1
	(e)	Unclassified	...	42	1,309	1,351	18	42
44-6a.		Blackwater Fever	...	—	3	3	3	—
39.		Trypanosomiasis	...	1	5	6	1	—
		Yaws	...	6	185	191	—	11
40.		Ankylostomiasis	...	58	1,839	1,897	8	72
42.		Schistosomiasis	...	46	949	995	4	46
41-42.		Other Helminthic diseases	...	2	247	249	—	3
15-19,		Other infectious and/or parasitic diseases	...	4	145	149	4	2
20-36,			...					
43-44.			...					
45-55. <i>Cancer and other tumours.</i>								
	(a)	Malignant	...	8	99	107	14	8
	(b)	Non-malignant	...	2	180	182	3	2
	(c)	Undetermined	...	—	20	20	1	—
Carried forward				426	10,227	10,653	194	401

Table VIIb. Return of Diseases and Deaths (Native In-patients) for the year 1949 (including Asiatics, Native Officials, K.A.R. Native Ranks, Native General Population, Asiatic and Native Convicts)

Diseases	Remaining at the end of 1948	Admissions during 1949	Total cases treated	Deaths	Remaining at the end of 1949
<i>Brought forward</i> ...	426	10,227	10,653	194	401
56-69. <i>Rheumatism, Diseases of Nutrition and Endocrine Glands and other general diseases.</i>					
56-57. Rheumatic conditions ...	11	338	349	1	15
59. Diabetes	—	5	5	1	—
60. Scurvy	1	6	7	—	—
61. Beri-beri	—	4	4	—	—
62. Pellagra	2	29	31	1	6
63-69. Other diseases					
(a) Nutritional	—	6	6	—	—
(b) Endocrine glands and general	—	48	48	4	3
70-74. <i>Diseases of the Blood and Blood-forming organs</i>	7	119	126	14	6
75-77. <i>Acute and chronic Poisoning</i> ...	—	4	4	1	—
78-89. <i>Diseases of the Nervous System and Sense Organs.</i>					
82. Cerebral haemorrhage	5	82	87	9	7
78, 81, 83-87. Other diseases of the nervous system	6	178	184	13	5
88. Trachoma	—	13	13	—	1
88. Other diseases of the eye and annexa	23	954	977	—	33
89. Diseases of the ear and mastoid sinus	4	115	119	—	3
90-103. <i>Diseases of the Circulatory System</i>					
90-95. (a) Heart diseases	2	68	70	25	3
96-103. (b) Other Circulatory diseases	9	137	146	5	2
104-114. <i>Diseases of the Respiratory System.</i>					
106. Bronchitis	13	514	527	3	17
107-109. Pneumonia :—					
(a) Broncho-pneumonia	3	173	176	28	3
(b) Lobar pneumonia	10	455	465	27	7
(c) Otherwise defined	—	98	98	3	6
104-105, 110-114. Other diseases of the Respiratory System	4	161	165	2	1
115-129. <i>Diseases of the Digestive System.</i>					
119-120. Diarrhoea and Enteritis					
(a) Under 2 years of age	—	111	111	4	6
(b) Over 2 years of age	2	128	130	10	5
121. Appendicitis	2	24	26	2	—
122. Hernia, Intestinal Obstruction	7	173	180	8	13
124. Cirrhosis of the liver	2	19	21	7	1
125-127. Other diseases of the liver and biliary passage	2	64	66	6	4
115-118, 123, 128, 129. Other diseases of the Digestive System	10	488	498	13	11
130-139. <i>Non-Venereal Diseases of the Genito-Urinary System.</i>					
130-132. Nephritis (all forms) :—					
(a) Acute	—	21	21	7	1
(b) Chronic	1	27	28	6	—
(c) Unclassified	—	15	15	—	1
133-139. Other non-venereal diseases of the Genito-Urinary System ...	28	665	693	10	26
<i>Carried forward</i> ...	580	15,469	16,049	404	587

Table VIb. Return of Diseases and Deaths (Native In-patients) for the year 1949 (including Asiatics, Native Officials, K.A.R. Native Ranks, Native General Population, Asiatic and Native Convicts)

Diseases				Remaining at the end of 1948	Admissions during 1949	Total cases treated	Deaths.	Remaining at the end of 1949
<i>Brought forward</i>				580	15,469	16,049	404	587
140-150. <i>Diseases of Pregnancy, Child- birth and the Puerperal state.</i>								
140, 141-								
142.	(a)	Abortion	... ..	2	145	147	4	—
	(b)	Ectopic gestation	... ..	1	—	1	—	—
145-147.	(c)	Toxaemias of pregnancy	... ..	—	49	49	5	1
143-144, 148-150.	(d)	Other conditions of the Puer- peral state	... ..	30	1,380	1,410	29	34
151-156. <i>Diseases of the Skin, Cellular Tissues, Bones and Organs of Locomotion</i>				220	4,129	4,349	19	220
157-161. <i>Congenital Malformations and diseases of early infancy.</i>								
157.	(a)	Congenital Malformations	... ..	—	18	18	—	1
158.	(b)	Congenital Debility (children under one year)	... ..	—	16	16	2	—
159.	(c)	Premature birth	... ..	—	7	7	1	1
161.	(d)	Other diseases peculiar to early infancy	... ..	—	3	3	—	—
162.	Senility	... ..	... ..	—	11	11	4	1
163-198. <i>External Causes.</i>								
172-198.	Other forms of violence			147	2,926	3,073	71	182
199-200.	<i>Ill-defined Diseases</i>			39	1,521	1,560	34	93
TOTAL				1,019	25,674	26,693	573	1,120

Table VIIa. Return of Diseases (European Out-patients) for the year 1949.

<i>Diseases</i>			<i>Diseases</i>		
	<i>Males</i>	<i>Females</i>		<i>Males</i>	<i>Females</i>
1-44. <i>Infectious and parasitic Diseases.</i>			Brought forward ...	255	173
1-2. Enteric Group :—			56-69. <i>Rheumatism, diseases of Nutrition and Endocrine Glands and other general diseases.</i>		
1. (a) Typhoid Fever ...	1	—	56-57. Rheumatic conditions	13	20
(b) Paratyphoid fever	1	—	60. Scurvy ...	—	1
4. Relapsing Fever ...	—	1	62. Pellagra ...	1	—
7. Measles ...	7	2	65-69. Other diseases—		
9. Whooping cough ...	—	1	(b) Endocrine glands and general ...	4	9
10. Diphtheria ...	1	2	70-74. <i>Diseases of the Blood and Blood-forming Organs</i> ...	3	19
11. Influenza ...	14	10	78-89. <i>Diseases of the Nervous System and Sense Organs.</i>		
13. Dysentery—			82. Cerebral haemorrhage	1	1
(a) Amoebic ...	9	12	78, 81, Other diseases of the 83, 87. Nervous System ...	19	22
(b) Bacillary ...	4	—	88. Other diseases of the eye and annexa ...	55	21
(c) Unclassified ...	—	2	89. Diseases of the ear and mastoid sinus ...	92	60
22. Tetanus ...	1	—	90-103. <i>Diseases of the Circulatory System.</i>		
23-32. Tuberculosis all forms :—			90-95. (a) Heart diseases	17	9
23. Tuberculosis of the Respiratory System ...	1	3	97-103. (b) Other circulatory diseases ...	50	42
24-32. Other tuberculous diseases ...	—	2	104-114. <i>Diseases of the Respiratory System.</i>		
33. Leprosy ...	1	—	106. Bronchitis ...	35	24
34-35. Venereal Diseases :—			107-109. Pneumonia :—		
(a) Syphilis ...	5	—	107. (a) Broncho-pneumonia	2	3
(b) Gonorrhea ...	1	2	(b) Lobar pneumonia	9	1
(c) Other venereal diseases ...	1	—	104, 105, 110-114. Other diseases of the Respiratory System ...	119	96
38. Malaria.			115-119. <i>Diseases of the Digestive System.</i>		
(a) Benign tertian ...	18	12	119-120. Diarrhoea and Enteritis :—		
(b) Subtertian ...	33	24	(a) Under 2 years of age	26	32
(c) Cachexia ...	1	—	(b) Over 2 years of age	94	100
(d) Unclassified ...	118	74			
39. Ratbite fever ...	2	—			
42. Schistosomiasis ...	4	2			
41-42. Other Helminthic diseases ...	7	3			
15, 19, 20, 36, 43, 40. Other infectious and/or parasitic diseases	10	10			
45-55. <i>Cancer and other Tumours.</i>					
(a) Malignant ...	1	1			
(b) Non-malignant ...	14	9			
(c) Undetermined ...	—	1			
Carried forward ...	255	173		795	633

Table VIIa. Return of Diseases (European Out-patients) for the year 1949.

<i>Diseases</i>	<i>Males</i>	<i>Females</i>	<i>Diseases</i>	<i>Males</i>	<i>Females</i>
Brought forward ...	795	633	Brought forward ...	1,118	962
121. Appendicitis ...	5	7	143, 144,		
122. Hernia, intestinal obstruction ...	11	2	148, 150. (<i>d</i>) Other conditions of the puerperal state ...	—	104
124. Cirrhosis of the Liver ...	2	—	151–156. Diseases of the Skin, Cellular Tissues, Bones and Organs of Locomotion ...	373	262
125–127. Other diseases of the liver and billiary passage	6	3			
115, 118,			157–161. Congenital malformations and Diseases of Early Infancy.		
123–128, Other diseases of the digestive system ...	266	208	157. (<i>a</i>) Congenital Malformations ...	3	—
130–139. Non-venereal Diseases of the Genito-urinary System.			161. (<i>b</i>) Other diseases peculiar to early infancy ...	15	16
130–132. Nephritis (all forms):—			162. Senility ...	1	—
130. (<i>a</i>) Acute ...	—	1	163–198. External Causes.		
133–139. Other non-venereal diseases of the Genito-urinary system ...	33	90	172–198. Other forms of violence ...	203	116
140–150. Diseases of Pregnancy, Childbirth and the Puerperal State.			199–200. Ill-defined diseases	211	227
140–141, 142 (<i>a</i>) Abortion ...	—	15			
145–147 (<i>c</i>) Toxaemias of pregnancy ...	—	3	TOTAL	1,924	1,687
Carried forward ...	1,118	962			

Table VIIb. Return of Diseases (Native Out-patients) for the year 1949 (Including Asiatics Native Officials, K.A.R. Native Ranks, and Native Convicts).

<i>Diseases</i>			<i>Diseases</i>		
	<i>Males</i>	<i>Females</i>		<i>Males</i>	<i>Females</i>
1-44. <i>Infectious and parasitic diseases.</i>			<i>Brought forward</i>	42,095	26,031
1-2. Enteric Group :—			56-57. Rheumatic conditions	4,962	3,721
1. (a) Typhoid fever ...	13	16	59. Diabetes ...	2	2
(b) Paratyphoid fever	—	1	60. Scurvy ...	23	3
2. (c) Type undefined ...	—	1	61. Beri-beri ...	3	5
4. Relapsing fever ...	374	177	62. Pellagra ...	30	39
5. Undulant fever ...	3	—	58-63-64. Other Diseases.		
6. Smallpox ...	7	10	(a) Nutritional ...	27	25
7. Measles ...	67	48	(b) Endocrine Glands and general ...	36	38
8. Scarlet fever ...	—	1	70-74. <i>Diseases of the Blood and Blood-forming Organs</i> ...	235	233
9. Whooping cough ...	148	158	75-77. <i>Acute and chronic poisoning</i> ...	4	1
10. Diphtheria ...	4	4	78-89. <i>Diseases of the Nervous System and Sense Organs.</i>		
11. Influenza ...	49	13	82. Cerebral haemorrhage	85	19
13. Dysentery :—			78-81, Other diseases of the		
(a) Amoebic ...	174	42	83-87 nervous system ...	1,543	607
(b) Bacillary ...	51	18	88. Trachoma ...	40	23
(c) Unclassified ...	203	92	88. Other diseases of the eye and annexa ...	14,528	13,334
16. Acute Poliomyelitis ...	2	—	89. Diseases of the ear and mastoid sinus ...	4,603	2,579
17. Encephalitis lethargica	1	—	90-103. <i>Diseases of the Circulatory System.</i>		
18. Cerebro-spinal fever ...	19	7	90-95. (a) Heart diseases	95	98
21. Rabies ...	2	—	96-103. (b) Other circulatory diseases ...	336	133
22. Tetanus ...	7	2	104-114. <i>Diseases of the Respiratory System.</i>		
23-32. Tuberculosis all forms :—			106. Bronchitis ...	17,883	10,419
23. Tuberculosis of the Respiratory System	202	86	107-109. Pneumonia.		
24-32. Other tuberculosis diseases ...	97	31	(a) Broncho-pneumonia	172	107
33. Leprosy	213	99	(b) Lobar-pneumonia	384	119
34-35. Venereal diseases			(c) Otherwise defined	196	151
(a) Syphilis ...	3,585	2,976	104-105,		
(b) Gonorrhoea ...	1,639	840	110-114. Other diseases of the Respiratory System ...	10,806	5,221
(c) Other venereal diseases ...	109	63	115-129. <i>Diseases of the Digestive System.</i>		
38. Malaria :—			119-120. Diarrhoea and Enteritis—		
(a) Benign tertian	750	435	(a) Under 2 years of age ...	1,847	1,465
(b) Subtertian ...	4,290	2,712	(b) Over 2 years of age ...	2,005	947
(c) Quartan ...	27	26	121. Appendicitis ...	22	4
(d) Cachexia ...	348	329	122. Hernia, intestinal obstruction ...	204	6
(e) Unclassified ...	14,613	8,971	124. Cirrhosis of the Liver ..	16	5
44-6a. Blackwater fever ...	2	—	125-127. Other diseases of the Liver and Biliary passage ...	90	58
39. Trypanosomiasis ...	4	4	115, 118, 123,		
Yaws ...	392	378	Other diseases of the		
40. Ankylostomiasis ...	6,570	5,031	128, 129. Digestive System	26,042	15,233
42. Schistosomiasis ...	6,612	2,352		128,314	80,626
41-42. Other Helminthic diseases ...	864	656			
15, 19, 20,					
36, 43, 44. Other infectious and/or parasitic diseases ...	376	257			
45-55. Cancer and other Tumours.					
(a) Malignant ...	58	53			
(b) Non-Malignant...	201	131			
(c) Undetermined ...	19	11			
56-69. <i>Rheumatism, Diseases of Nutrition and Endocrine Glands and other general diseases.</i>					
<i>Carried forward</i> ...	42,095	26,031			

Table VIIb. Return of Diseases and Deaths (Native Out-patients) for the year 1949. (Including Asiatics, Native Officials, K.A.R., Native Ranks, and Native Convicts)

Diseases			Males	Females	Diseases			Males	Females
Brought forward ...			128,314	80,626	Brought forward ...			129,263	81,604
130-139.	Non-Venereal Diseases of the Genito-urinary system.				151-156.	Diseases of the Skin, Cellular Tissues, Bones and Organs of Locomotion ...		47,451	20,409
130-132.	Nephritis (all forms) :—				157-161.	Congenital Malformations and diseases of early infancy.			
(a)	Acute ...	...	10	12	157-161.	(a) Congenital malformations ...		11	20
(b)	Chronic ...	...	29	8		(b) Congenital debility (children under 1 year)		25	16
(c)	Unclassified ...	...	15	5		(c) Premature birth (children under 1 year) ...		1	10
133-139.	Other non-venereal diseases of the Genito-urinary System ...		895	798		(d) Other diseases peculiar to early infancy ...		3	4
140-150.	Diseases of Pregnancy, Childbirth and the Puerperal state.				162.	Senility ...	...	28	2
140, 141, 142.	(a) Abortion ...		—	155	163-198.	External Causes ...			
145-147.	(b) Toxaemias of pregnancy ...		—	125	172-198.	Other forms of violence ...		36,190	10,046
143, 144, 148-150.	(c) Other diseases of the puerperal state ...		—	1,486	199-200.	Ill-defined diseases		10,263	4,792
Carried forward ...			129,263	81,604	TOTALS ...			223,235	118,514

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D. J. M. MACKEN
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